REMARKS

Claims 32-57 and 77-81 are pending in the application. Claims 37-57, 77, and 78 have been cancelled by this amendment. Therefore, claims 32-36 and 79-81 are at issue.

This amendment is submitted in accordance with 37 C.F.R. §1.116(a) and §1.116(b) in order to present the rejected claims in a better form for allowance or appeal. The amendment is necessary to eliminate a rejection under 35 U.S.C. §103, and to overcome an objection to the specification. This amendment was not presented earlier because applicants believed, and still believe, that all outstanding issues were resolved in the amendment filed October 19, 2006. The amendment should be entered because it places the application in better form for allowance or appeal, and the amendment does not require further searching or present any new issues.

By this amendment, applicants have cancelled withdrawn claims 37-57, 77, and 88 without prejudice. These claims have been cancelled to facilitate prosecution, and not for reasons related to patentability. Applicants reserve the right to pursue the subject matter of these cancelled claims in a continuing application.

Independent claim 32 has been amended to recite that *both* the acidic water-absorbent resin and the basic water-absorbent resin are capable of absorbing at least ten times their weight in water, when in a neutralized form or a charged form, respectively. Support for this amendment can be found in the specification at page 34, lines 13-17 and page 39, lines 23-27. This amendment does not change the scope of the claims, but merely provides a definition for the claim resins in order to clarify that the claimed resins are different from an ion exchange resin.

The specification is objected to for containing an abstract in excess of 150 words. Applicants, therefore, enclose a new abstract, on a separate sheet, to overcome this objection. It is submitted that the enclosed abstract fully conforms to the requirements of MPEP §608.01(b).

Claims 32-36 and 79-81 stand rejected under 35 U.S.C. as being unpatentable over WO 96/15180 (WO '180) in view of WO 97/16492, referred to and discussed in the Office Action and herein as Ishizaki et al. U.S. Patent No. 6,001,911 ('911), under 35 U.S.C.

§103. This rejection is based on the contention that WO '180 discloses an unneutralized acidic water-absorbent resin and an unneutralized basic water-absorbent resin, and that the '911 patent discloses preparation of a sheet-like absorbent material having a superabsorbent resin deposited on a substrate. For the reasons set forth below, it is submitted that this rejection is in error and should be withdrawn.

Prior to discussing the cited references, it should be noted that the present claims are directed to an article comprising a sheet material comprising an unneutralized *acidic water-absorbing* resin and an unneutralized *basic water-absorbing* resin, made by depositing particles of each resin on a support surface, then compressing the particles to form a water-absorbent sheet (claim 32). The sheet can further contain a second neutralized acidic water-absorbing resin (claim 81) and/or a bonding expedient (claim 79). An important feature of the present invention is that *both* the acidic and the basic resins are *water absorbing*, i.e., are capable of swelling and absorbing aqueous media. See specification, page 17, lines 27-29.

More particularly, a water-absorbent resin utilized in the present invention, either acidic or basic, is capable of absorbing several times its weight in water, and the resin swells during this absorption process. For example, see the specification, at page 2, line 21 through page 3, line 2, wherein it is disclosed that a water-absorbent resin, i.e., a superabsorbent resin (SAP) can absorb more than one hundred times its own weight in water. Also, see specification at page 34, lines 13-17 and page 39, lines 23-27, wherein the acidic water-absorbing resin and basic water-absorbing resin *each* are disclosed as "capable of swelling and absorbing at least ten times its weight in water, when in neutralized form". Also, see Exhibit A submitted concurrently with this amendment, which is an excerpt from "Modern Superabsorbent Polymer Technology" (1998), stating that superabsorbent polymers can absorb up to 1,000 grams of water per gram of polymer and up to 100 g of dilute salt solution per gram of polymer. Also note that the excerpt states that the superabsorbent polymer gel will *not* release water when squeezed with the fingers.

In use, the acidic and basic water-absorbing resins absorb several times their weight of an aqueous fluid, e.g., urine when used in a diaper, and *retain* the urine, even under the stresses of a moving and sitting infant. An ion exchange resin does not absorb and retain

several times its weight in water, but merely exchanges ions on the resin for ions in the aqueous liquid containing the ion exchange resin. The typical example of an ion exchange resin is a water softener, wherein the resin exchanges sodium ions for the calcium and magnesium ions in the water to provide soft water. If the ion exchange resin absorbed water and swelled, water would not flow through the bed at a sufficient rate for use. In the case of a diaper, an ion exchange resin alone that merely exchanges ions with the urine, and allows the urine to pass through the resin bed, would be of little to no benefit.

The polymer blend of the WO '180 reference is substantially different from the blend of acidic and basic water-absorbing resins recited in the present claims. WO '180 discloses a combination of (1) an unneutralized anionic superabsorbent (i.e., an unneutralized acidic water-absorbent resin) and (2) an anion exchanger. See WO '180, abstract, and page 3, lines 4-10. The anion exchanger of WO '180 is *not* a basic water-absorbing resin, but is a highly crosslinked, nonswelling, and nonabsorbent ion exchange resin. See specification, page 9, lines 6-9, which discusses WO '180.

WO '180 more fully discloses the ion exchange resins at page 6, line 18 through page 9, line 6 of the reference. More particularly, WO '180 states:

> "Ion exchange is the reversible interchange of ions between a solid and liquid in which there is *no permanent change in the structure* of the solid, which is the ion exchange material." (Emphasis added).

This is in direct contrast to a water-absorbent resin which swells to several times its volume after absorbing water, and resists releasing the absorbed water (See Exhibit A).

The disclosed ion exchangers of WO '180 are well known, and especially are known *not* to absorb liquids and swell. These resins are used for a reversible exchange of cations or anions (WO '180, page 6, line 34 through page 7, line 1), *not* to absorb and retain large quantities of water. The ion exchange resins disclosed in WO '180 are highly crosslinked and cannot absorb water appreciate amounts of water, as evidenced by the commercial ion exchanger resins discussed in WO '180. The ion exchange resins disclosed in WO '180 absorb a small amount of water to merely condition the resin to perform an ion exchange function, and the ion exchange resin does *not* change form.

In fact, absorbing a large amount water and swelling is disadvantageous for an ion exchange resin. Ion exchange resins are designed to have water flow through the resin bed and exchange ions, for example to help purify water. A faster flow increases efficacy in treating water. Absorbing water and swelling would retard the flow of water through the resin bed, and therefore is avoided.

WO '180, at page 3, lines 12-16, refers to a cationic superabsorbent. However, this is the only reference to a cationic superabsorbent. The remainder of WO '180 is silent with respect to a cationic superabsorbent and discloses *only* anion exchangers. More particularly, the full disclosure of ion exchange and anion exchangers in WO '180 (page 6, line 18 through page 9, line 6) makes it sufficiently clear that an anion exchanger is different from a water-absorbing resin, which are described on page 4, line 37 through page 6, line 16 of WO '180. An ion exchanger of WO '180 has *no* absorbing effect of its own, but serves to convert an ionic superabsorbent of WO '180 into a salt form and to de-ionize the solution to be absorbed. WO '180 therefore makes a clear distinction between a superabsorbent and an ion exchanger throughout the specification, except for this one sentence referred to above. There is no reasonable indication in WO '180 that the anion exchanger is a water-absorbent resin, and this anion exchanger clearly has been erroneously and accidentally designated a "cationic superabsorbent".

The present claims do not recite an ion exchange resin of the type disclosed in WO '180, but recite polymers having a basic functionality and that are capable of absorbing large quantities of water, e.g., *lightly crosslinked* poly(vinylamine) and *lightly crosslinked* poly(dimethylamine ethyl(acrylamide), as disclosed in the present specification.

Therefore, the combination of an acidic and a basic *water-absorbing* resin recited in the present claims is substantially different from the combination of an acidic water-absorbing resin and *nonabsorbent* ion exchange resin disclosed in WO '180. WO '180 fails to teach or suggest *any* basic water-absorbing resin, and fails to consider or address using a basic water-absorbing resin as a substitute for an ion exchange resin.

Accordingly, due to the substantial differences between an ion exchange resin and a lightly crosslinked basic water-absorbing resin, WO '180 provides no motivation or incentive for a person skilled in the art to substitute an unneutralized basic *water-absorbing*

for an ion exchange resin. It is the present inventors who first discovered that the use of a blend of an unneutralized acidic *water-absorbing* resin and an unneutralized basic *water-absorbing* resin provides improvements over resins and blends in absorbing large quantities of aqueous fluids and demonstrating excellent fluid permeability.

The '911 patent does not overcome the deficiencies of WO '180. The '911 patent merely teaches the preparation of a sheet like absorbent material from a superabsorbent resin. The '911 patent fails to teach any blend of resins, but merely teaches the formation of an absorbent sheet from an acidic water-absorbing resin.

The most that can possibly be gleaned from a combination of WO '180 and '911 patent is forming the blend of WO '180 into an absorbent sheet using the method of the '911 patent. However, this combination still fails to teach or suggest a substitution of an unneutralized basic water-absorbing resin for the nonabsorbent ionic exchange resin of WO '911.

As stated in the MPEP §2143,

> "to establish a prima *facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."

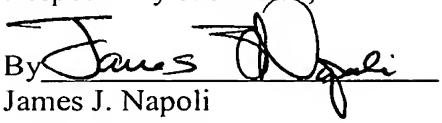
For the reasons set forth above, neither WO '180, nor the '911 patent, nor a combination thereof teach or suggest either the modifications required to arrive at the presently claimed processes or all of the claim limitations.

In summary, the combination of WO '911 and the '911 patent fails to render claims 32-36 and 79-81 obvious under 35 U.S.C. §103. It is submitted, therefore, that the claims are in proper form and scope for allowance. An early and favorable action on the merits is respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

Dated: May 1, 2007

Respectfully submitted,

By 

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